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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PAYNE, SHARON E

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,275

Applicant(s)

BELLONI ET AL.

Examiner

Sharon E. Payne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-63 and 67-70 is/are rejected.
- 7) ☒ Claim(s) 64-66 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. The indicated allowability of claims 41-43, 46-50 and 52-62 is withdrawn in view of the newly discovered reference(s) to interchangeable components. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

2. Claims 63 and 69 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 63 and 69 are indefinite for reciting the limitation "having no light-refractive structure". All transparent or translucent plates refract light because the index of refraction is different than one. For purposes of writing this office action, it is assumed that the Applicant means that the plate is flat.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 67-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Simon (U.S. Patent 5,988,841).

Regarding claim 67, Simon discloses a plurality of units (Figs. 1 and 2) each having light guide forming a cavity (Figs. 1, 2, 7, 9, 10, 16 and 17), a lamp for directing light into the cavity (abstract, Figs. 1, 2, 4 and 5), and at least one optical component (reference numbers 18 and 32) having light directing properties for influencing the beam path of at least a portion of the light directed into the cavity (Figs. 1 and 2), wherein the optical components are interchangeable among each unit and have different light directing properties (column 5, lines 29-43).

Concerning claim 68, Simon discloses a plurality of units (Figs. 1 and 2) each having light guide forming a cavity (Figs. 1, 2, 7, 9, 10, 16 and 17), a lamp for directing light into the cavity (abstract, Figs. 1, 2, 4 and 5), and at least one optical component (reference numbers 18 and 32) having light directing properties for influencing the beam path of at least a portion of the light directed into the cavity (Figs. 1 and 2), a method of changing the light emission properties of the units by interchanging optical components having different light directing properties among the units (column 5, lines 29-43).

5. Claims 63, 69 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Schoniger et al. (U.S. Patent 5,027,258).

Concerning claim 63, Schoniger discloses the step of providing a prefabricated light permeable component (reference number 17), providing a light permeable carrier plate having no refractive structure (reference number 23, plate portion only, portion on the right at the top of Fig. 5 covering plate 25),

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arranging at least one pre-fabricated light permeable component on the carrier plate in a predetermined area of the carrier plate (Fig. 5), fastening the pre-fabricated light permeable component and the carrier plate so that they limit the cavity of the hollow light guide (Fig. 5) wherein in the carrier plate (reference number 23) forms the outermost element of the light output device (Fig. 5).

Regarding claim 69, Schoniger discloses a display unit. The display unit includes a support structure (reference numbers 27 and 28), a light guide forming a cavity (Fig. 5), a lamp for directing light into the cavity (reference number 15), a carrier plate (reference number 23, plate portion only, portion on the right at the top of Fig. 5 covering plate 25) carried by the support structure (Fig. 5) and defining a light emitting surface of the cavity (Fig. 5), the carrier plate having no light-refractive structure (Fig. 5), and an optical component (reference number 17) carried by the carrier plate (Fig. 5), the optical component having a light-refractive structure and being formed by one or more light permeable elements (Figs. 2 and 5). (For purposes of writing this rejection, it is assumed that by "having no light-refractive structure" the applicant means that the plate is flat.)

Concerning claim 70, Schoniger discloses a support structure (reference numbers 27 and 28), a light guide forming a cavity (Fig. 5), a lamp for directing light into the cavity (reference number 15), a carrier plate (reference number 23 plate portion only, portion on the right at the top of Fig. 5 covering plate 25) carried by the support structure (Fig. 5) and defining a light emitting surface of the cavity (Fig. 5), and an optical component (reference numbers 25, 17 and 10) carried by the carrier plate (Figs. 2 and 5) formed by two or more light permeable

elements (Fig. 5), adjacent light permeable elements being separated by a spacer element (parts between plates on support structure 28).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 41-48, 50-51, 54-58, 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (U.S. Patent 5,704,703) in view of Simon (U.S. Patent 5,988,841).

Regarding claim 41, Yamada et al. discloses a support structure (Fig. 14A), at least one hollow light guide with a cavity (Fig. 18), at least one lamp for directing light into the cavity (reference number 105), optical components carried by the support structure (Fig. 18), the components having light directing properties for influencing the beam path of the light output from the lamp (Fig. 18), at least one of the optical components being a light permeable component (reference number 110) having a boundary surface with a medium of a second index of refraction different from the first (air, see portions between peaks) the light permeable component being part of a light output device (Fig. 18) and the boundary surface being provided with a light-refractive structure for deflecting light in at least one plane directed perpendicular to a light exit face, so that the

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light intensity distribution curve of the light emerging at the light exit face is influenced in this plane (Fig. 18), the optical component being a light refractive structure (Fig. 18, reference number 110). Yamada et al. does not disclose interchangeable parts.

Simon discloses the element being mounted on the support structure (Fig. 16) and being dimensioned so that elements of the same type are interchangeable among the light units of the system whereby the light emission properties of the units may be changed by interchanging elements of the same type having different optical properties (column 5, lines 29-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the interchangeable parts of Simon in the apparatus of Yamada et al. to be able to change parts between lighting systems.

Concerning claim 42, Yamada et al. does not disclose interchangeable parts. Simon discloses the support structure of each light unit of the system having the same dimensions for receiving the element (column 5, lines 29-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the interchangeable parts of Simon in the apparatus of Yamada et al. to be able to change parts between lighting systems.

Concerning claims 43 and 57, Yamada et al. discloses a total reflective cap reflector (reference number 108).

Regarding claim 44, Yamada et al. discloses a cap reflector having reflecting properties that affect the light emission properties of the light unit (reference number 108).

Concerning claim 45, Yamada et al. discloses a light permeable component (reference number 110), wherein the light permeable component comprises one or more plate elements having different light refractive structures that affect the light emission properties of the light unit (Fig. 18).

Regarding claim 46, Yamada et al. discloses a plate with a refractive structure that essentially prevents a light emission above a limited angle relative to the perpendicular vis a vis light exit face in at least one plane perpendicular to the light exit surface so that shielding of light emerging at the light exit face is produced in this plane. (This element is considered to be inherent in Yamada et al., because all refractors satisfy the requirement of this claim due to Snell's law.)

Concerning claim 47, Yamada et al. discloses the support structure including a light permeable plate (reference number 102) and the plate elements rest on the light permeable plate (Fig. 18).

Regarding claims 48 and 61, Yamada et al. does not specifically disclose a frame element.

Using a frame element to hold the plate element onto the light permeable plate is considered an obvious variation in design. Since the frame is well known in the art, it would have been obvious to one of ordinary skill in the art to use a frame element to hold the plate elements together in the Yamada et al. reference.

Concerning claim 50, Yamada et al. does not disclose interchangeable parts. Simon discloses the support structure of a group of light units of the system having the same dimensions and the light emission properties are

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different according to the optical properties of at least one of the optical components being mounted on the support structure (column 5, lines 34-43). (Components of the different embodiments are interchangeable, which means that optical properties can be changed.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the interchangeable parts of Simon in the apparatus of Yamada et al. to enable one to change optical properties of an apparatus easily.

Regarding claim 51, Yamada et al. discloses an input reflector having reflecting properties and dimensions that affect the light emission properties of the unit (reference number 108).

Concerning claim 54, Yamada et al. discloses the light permeable component as a plate element (Fig. 18), and Simon discloses each of the light units of the group having the same dimensions for receiving the plate element (column 5, lines 29-43).

Having a group of light units is considered to be an obvious duplication of parts. Since the light units are well known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a group of them to increase the light output.

Changing the light output face for one of the light units is considered to be an obvious variation in design. Since the light output face (the plate) is well known in the art, it would have been obvious for one of ordinary skill in the art at

the time the invention was made to use a plate with different optical properties in one light unit from that in another light unit for varying the light output.

Regarding claim 55, Yamada et al. discloses an indoor light unit (column 1, lines 5-12). (LCDs are generally used indoors.)

Concerning claim 56, Yamada et al. discloses a support structure (Fig. 14A), at least one hollow light guide with a cavity (Fig. 18), at least one lamp for directing light into the cavity (reference number 105), optical components carried by the support structure (Fig. 18), the components having light directing properties for influencing the beam path of the light output from the lamp (Fig. 18), at least one of the optical components being a light permeable component (reference number 110) having a boundary surface with a medium of a second index of refraction different from the first (air, see portions between peaks) the light permeable component being part of a light output device (Fig. 18) and the boundary surface being provided with a light-refractive structure for deflecting light in at least one plane directed perpendicular to a light exit face, so that the light intensity distribution curve of the light emerging at the light exit face is influenced in this plane (Fig. 18), at least one of the optical components of each light unit being a cap reflector (reference number 108) mounted on the structure (Fig. 18) to reflect light in the light guide through the light permeable element (Fig. 18). Yamada et al. does not disclose interchangeable parts.

Simon discloses at least one of the components being an element that is dimensioned so that it can be used in any one of the light units of the system (column 5, lines 29-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the interchangeable parts of Simon in the apparatus of Yamada et al. to be able to change parts between lighting systems.

Regarding claim 58, Yamada et al. discloses the light permeable element (reference number 110) as a plate element that is secured to the light permeable plate of the support structure (Figs. 18 and 19).

Concerning claim 62, Yamada et al. does not disclose interchangeable parts. Simon discloses a first-mentioned element component can be replaced by a second element of the same dimensions and different properties so that by replacing the first element with the second element, the light unit will have different light emission properties (column 5, lines 29-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the interchangeable parts of Simon in the apparatus of Yamada et al. to change the lighting properties.

8. Claims 49 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. and Simon as applied to claims 47 and 56 respectively above, and further in view of Koike et al. (U.S. Patent 5,982,540).

Regarding claim 49, Yamada et al. does not disclose a spacer. Koike et al. discloses at least two plate elements (reference numbers 8 and 8') being separated by a spacer element resting on the light permeable plate (column 15, lines 17-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the spacer of Koike et al. in the apparatus of Yamada et al. to have a layer of air between two plates.

Concerning claim 59, Yamada et al. does not disclose a spacer. Koike et al. discloses the light permeable elements being plate elements (reference numbers 8 and 8') positioned on the light permeable plate with a spacer element disposed between adjacent plate elements and secured to the light permeable plate (column 15, lines 17-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the spacer of Koike et al. in the apparatus of Yamada et al. to have a layer of air between two plates.

9. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. and Simon as applied to claim 51 above, and further in view of Dreyer (U.S. Patent 5,692,822).

Regarding claim 52, Yamada et al discloses an input reflector that completely reflects light into the hollow light guide (reference number 108). Yamada et al. does not disclose a partial reflector reflecting some light and having some light bypass the light guide. Dreyer discloses an input reflector directing part of the light to bypass the hollow light guide to provide indirect lighting (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute one of the reflectors of Yamada et al. with a

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partial reflector of Dreyer to have one reflector allow some light to bypass the light guide to provide indirect lighting.

10. Claims 53 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Simon as applied to claim 41 above, and further in view of Koike et al. (U.S. Patent 6,290,364), hereinafter "Koike '364".

Regarding claim 53, Yamada et al. does not disclose a stack of components having a shielding effect at least in two directions perpendicular to each other. Koike '364 discloses at least two light permeable components with the light refractive structure (top and bottom of element 70), the two light permeable components being arranged in a stack to create a shielding effect at least in two directions perpendicular to each other (Fig. 18).

It would have been obvious to use element 70 of Koike '364 in the apparatus of Yamada et al. to create a shielding effect in directions perpendicular to each other.

Regarding claim 60 Yamada et al. does not disclose a stack of components having a shielding effect at least in two directions perpendicular to each other. Koike '364 discloses at least two light permeable elements (top and bottom of element 70), the two light permeable elements being plate elements (Fig. 18, both elements are elements of the plate) with the light refractive structure (Fig. 18), the two plate elements being arranged in a stack on the light

permeable plate to create a shielding effect in two directions perpendicular to each other (Fig. 18).

It would have been obvious to use element 70 of Koike '364 in the apparatus of Yamada et al. to create a shielding effect in directions perpendicular to each other.

Allowable Subject Matter

11. Claims 64-66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. Takahashi (U.S. Patent 5,575,962 discloses the elements listed in claim 64 and Shoniger discloses the elements of claim 63 for the reasons specified above. However the references cannot be combined because no motivation exists to combine them.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (703) 308-2125. The examiner can normally be reached on regular business hours. As of January 14, 2004, the examiner can be reached at (571) 272-2379.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

sep

A handwritten signature in black ink, appearing to be "S. O'Shea", written in a cursive style.